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Attorney Docket: 2500803-991110
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100

FIG. 1

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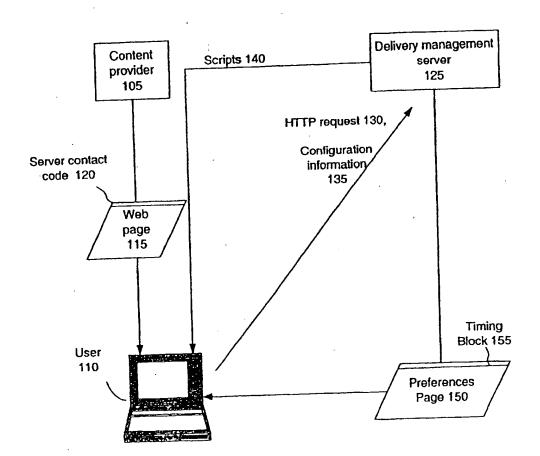Attorney: Andrew V. Smith, 415-836-2522

200

Processor 204

Main Memory 208

Display Interface 202 → Display 230

Communication
Infrastructure
206

Secondary Memory 210

Hard Disk Drive 212

Removable Storage
Drive 214 ----- Removable
Storage Unit
218

Interface 220 ----- Removable
Storage Unit
222

228

Communications
Interface 224

Communications Path 226

FIG. 2

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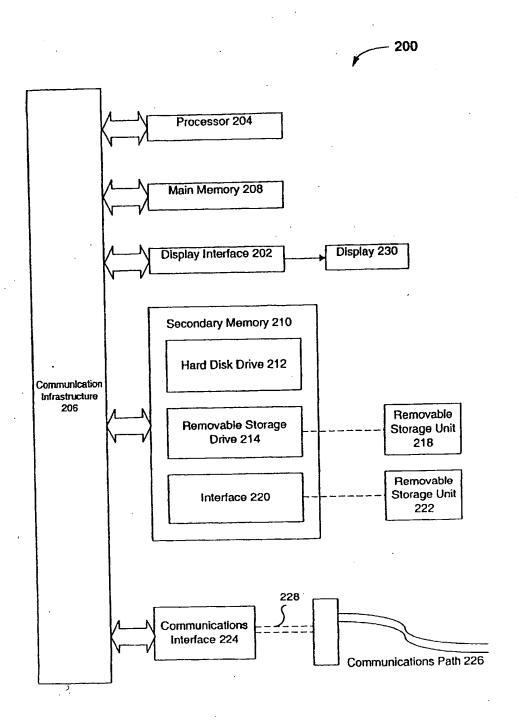Attorney: Andrew V. Smith, 415-836-2522

300

Start ~305

User loads page of content provider ~310

Player detection code is fetched from delivery managment server ~320

Perform player detection ~325

Store in cookies ~330

331 — Sufficient Information?

No

332 — Present preference page

333 — Receive preferences

334 — Store in cookies

Yes

User makes HTTP request, any cookies are sent to delivery management server ~335
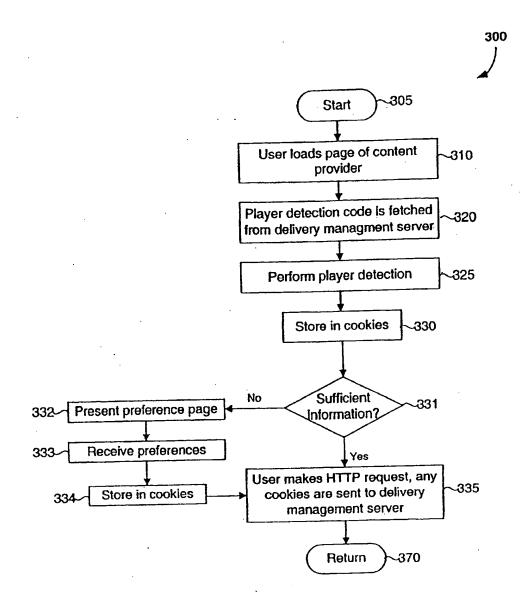
Return ~370

FIG. 3 A

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2   Flow Charts

Server-side
request processing
(Figure 1)

Delivery Manager
HTTP request
received ~ 371

Delivery Manager
cookies received? ~ 372

No

Send HTTP response
containing code to send
client to Detection URL ~ 373

Yes

Return empty
HTTP response ~ 374

FIG. 3B

Detection URL
HTTP request
received ~ 375

Analyze HTTP headers
to determine Operating
System, Platform, HTTP
client (user agent) ~ 376

Z

Send TimerStart code ~ 377

Send data block for
bandwidth
measurement ~ 378

Send TimerStop code ~ 379

Calculate bandwidth
and store it in a cookie ~ 380

Send client-side
media player
detection code ~ 381

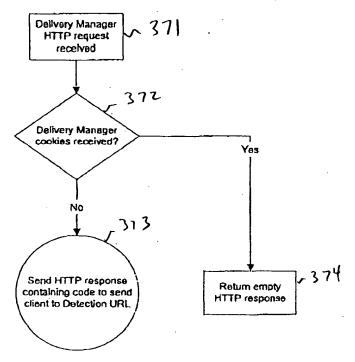**FIG. 3C**

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Z

| SEND MODIFIED INFORMATION HEADER INSTRUCTION | ~ 382 |

| SEND UNIQUE CLIENT ID | ~ 383 |

| CLIENT ACKNOWLEDGES INSTRUCTION AND APPENDS CLIENT ID POINTER ADDRESS INFORMATION | ~ 384 |

| CLIENT PREPARES MODIFIED HEADER INFORMATION | ~ 385 |

| CLIENT SENDS MODIFIED HEADER INFORMATION WITH ID UPON FURTHER REQUEST | ~ 386 |

| RETURN | ~ 387 |

FIG. 3D

325

Start —405

NETSCAPE ← Netscape or IE? 410 → IE

String search through mimetype and plugin arrays for media player ~411

Try to instantiate object for media player ~420

Player found? 413 — No

Permitted? 425 — No

Yes

Yes

Player is present ~415

Player is present ~430

Check for another media player? ~416 Yes

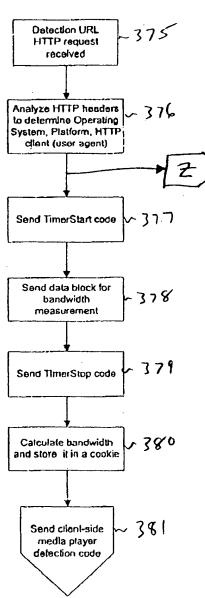Check for another media player? ~440 Yes

No

No

417 Return

FIG. 4A

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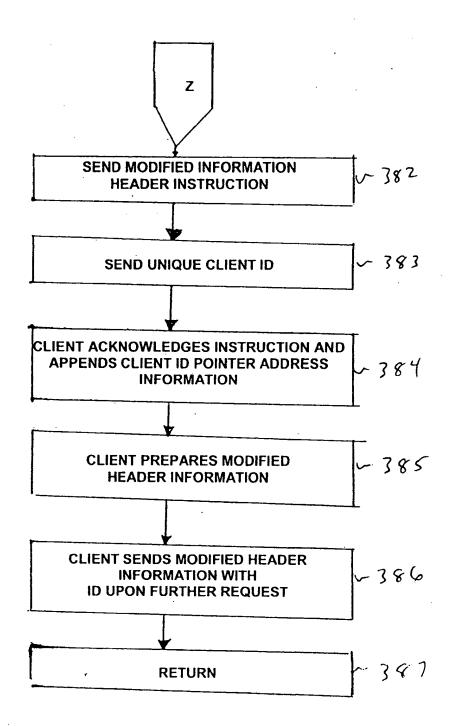Attorney: Andrew V. Smith, 415-836-2522

Client-sid
Windows Media Player (WMP) detection

Is WMP avail on this OS/platform? 441

Yes

Is ActiveX avail on this browser? 442 — No

Yes

Can ClassID for WMP7.1 or WMP8 be created? 443 — Yes → WMPversion = 7.1 444

No

Can ClassID for WMP7 be created? 445 — Yes → WMPversion = 7 446 ← Yes — Is mimetype application/x-ms-wmd registered by a plugin? 452

No

No

Can ClassID for WMP6.4 be created? 447 — Yes → WMPversion = 6.4 448 ← Yes — Is mimetype application/x-ms-wm or application/x-ms-wmv registered to a plugin? 453

No

No

Can WMP object be created? 449 — Yes → WMPversion = yes 450 ← Yes — Is mimetype application/x-msplayer2 registered to a plugin? 454

No 451

No

WMPversion = no ← No

Goto RealPlayer detection

FIG. 4B

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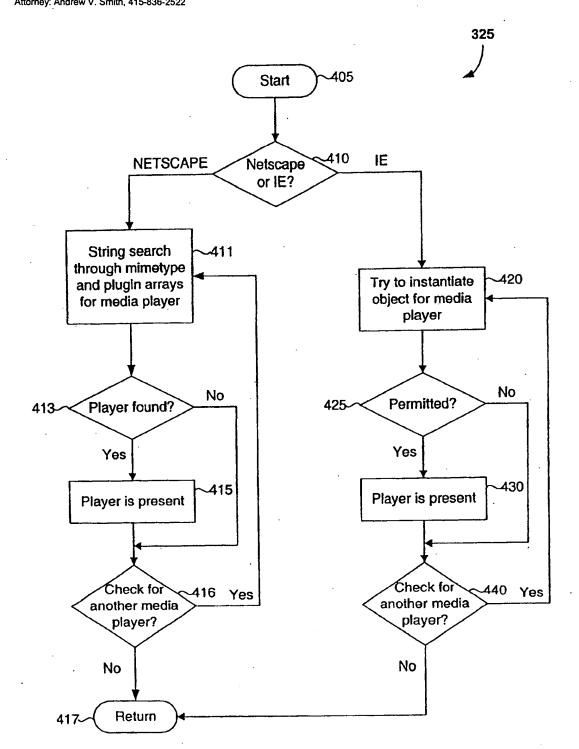Attorney: Andrew V. Smith, 415-836-2522

**Client-side
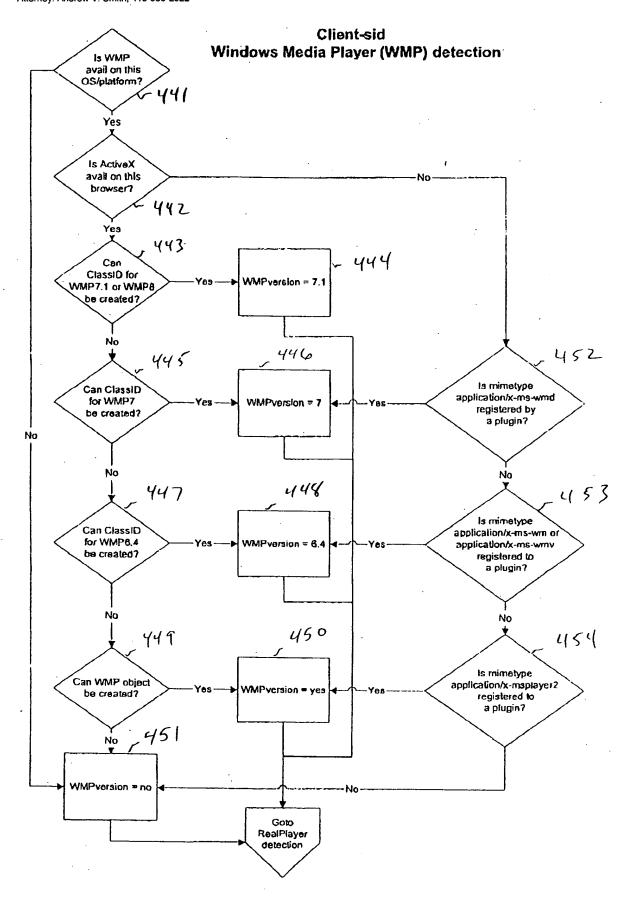RealPlayer (Real) detection**

From WMP
detection

455 — Is Real
avail on this
OS/platform?

Yes

456 — Is ActiveX
avail on this
browser?

464 — Is mimetype
audio/x-pn-realaudio-plugin
registered by
a plugin?

Yes

465 — Realversion = yes

457 — Can
RealPlayer G2
object be
created?

Yes → 458 — Realversion =
RealPlayerG2Object.GetVersionInfo()

466 — Is there a
plugin name
containing
"RealONE"?

Yes → 467 — Realversion = One

No

No

459 — Can
RealPlayer
object be
created?

468 — Is there a
plugin name
containing
"RealPlayer G2"?

Yes → 469 — Realversion = G2

No

Yes → 460 — Realversion = 5 ← Yes

470 — Is there a
plugin name
containing
"RealPlayer"?

No

No

461 — Can
RealVideo
object be
created?

Yes → 462 — Realversion = 4 ← Yes

471 — Is there a
plugin name
containing
"RealVideo"?

No

No
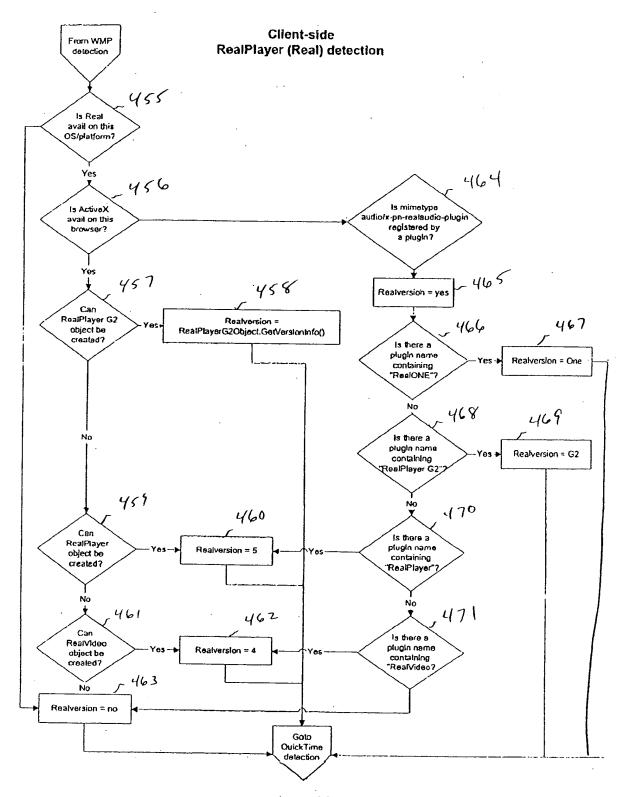
463 — Realversion = no

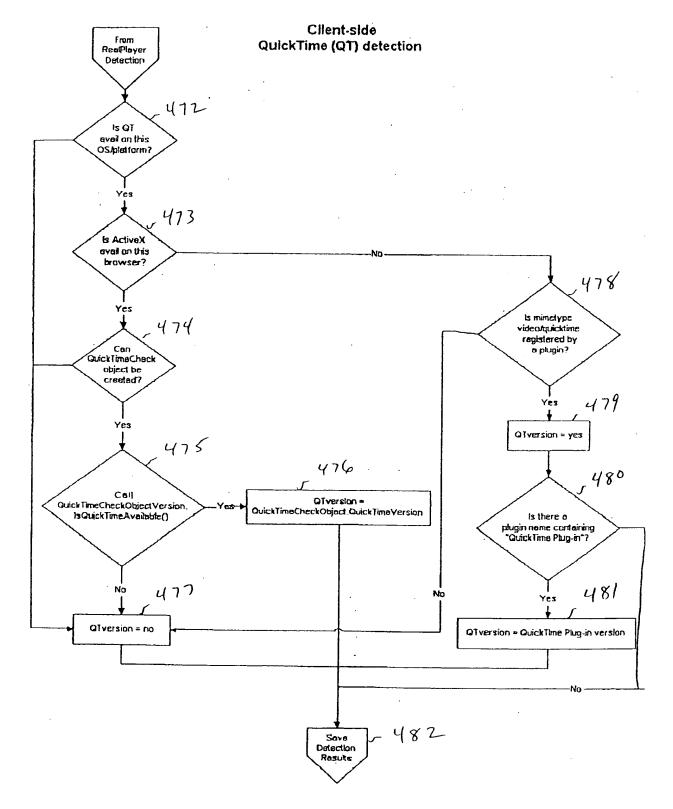Goto
QuickTime
detection

FIG. 4C

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**Client-side
QuickTime (QT) detection**

From
RealPlayer
Detection

_472_

Is QT
avail on this
OS/platform?

Yes

_473_

Is ActiveX
avail on this
browser?

No ──────────

Yes

_474_

Can
QuickTimeCheck
object be
created?

Yes

_475_

Call
QuickTimeCheckObjectVersion.
IsQuickTimeAvailable()

Yes ──▶ _476_

QTversion =
QuickTimeCheckObject.QuickTimeVersion

No _477_

QTversion = no

_478_

Is mimetype
video/quicktime
registered by
a plugin?

Yes _479_

QTversion = yes

_480_

Is there a
plugin name containing
"QuickTime Plug-in"?

Yes _481_

QTversion = QuickTime Plug-in version

No

No

Save
Detection
Results _482_

F1G. 4D

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332

Start ~505

Begin loading preference page ~510

Mark start time and begin loading timing block ~515

Finish loading timing block and mark end time ~520

Calculate data rate ~530

Display possible configurations ~535
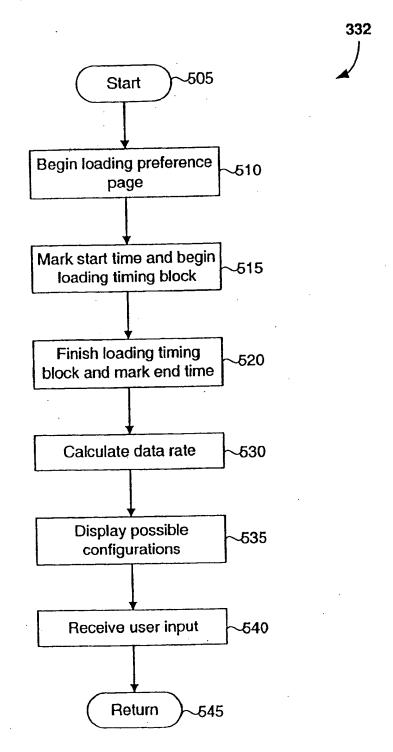
Receive user input ~540

Return ~545

FIG. 5 A

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Start — 550

Fetch estimated bandwidth information — 552

determining estimated time to retrieve data for determining connection speed with adequate resolution — 554

Determine chunk-size that will take estimated time to retrieve — 556

Retrieve/send determined chunk size and measure time to retrieve/send — 558

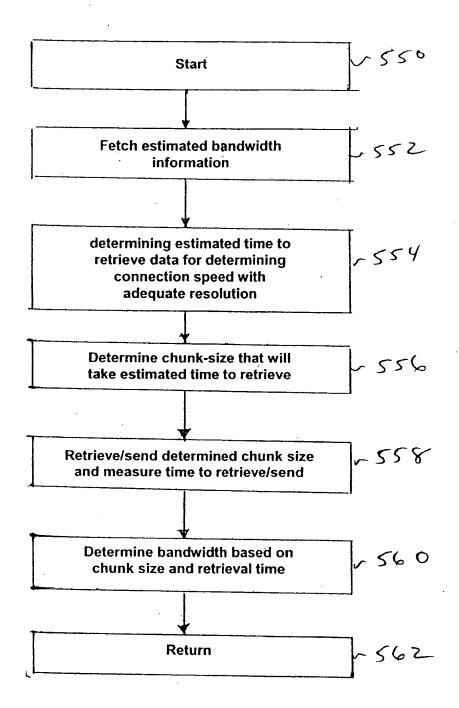Determine bandwidth based on chunk size and retrieval time — 560

Return — 562

FIG. 5B

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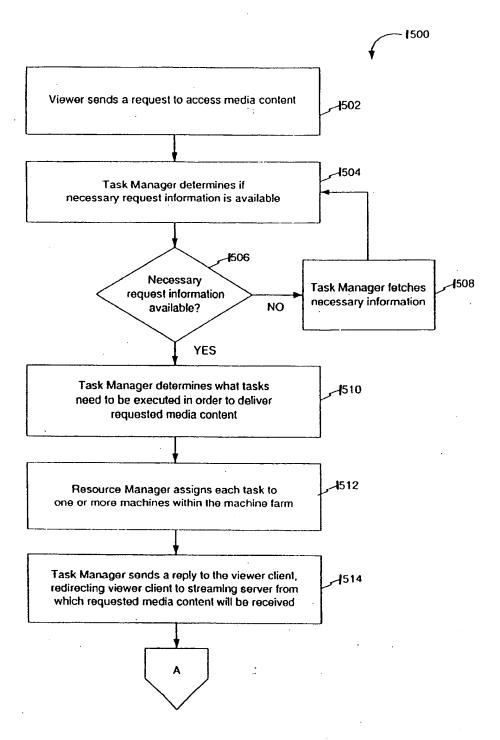Attorney: Andrew V. Smith, 415-836-2522

1500

Viewer sends a request to access media content ——1502

Task Manager determines if
necessary request information is available ——1504

Necessary
request information
available? ——1506 — NO → Task Manager fetches
necessary information ——1508

YES

Task Manager determines what tasks
need to be executed in order to deliver
requested media content ——1510

Resource Manager assigns each task to
one or more machines within the machine farm ——1512

Task Manager sends a reply to the viewer client,
redirecting viewer client to streaming server from
which requested media content will be received ——1514

A

FIG. 6A

A

1532
AUTO SOURCE TYPE
DETECTION ON?

YES   NO

1534
FETCH SOURCE TYPE
INFORMATION FROM
SOURCE SERVER/CLIENT

1536
REQUEST INPUT THROUGH
SOURCE INTERFACE?
user

1538
AUTO DESTINATION
TYPE DETECTION ON?

YES   NO

1540
FETCH DESTINATION TYPE
INFORMATION FROM
DESTINATION SERVER/CLIENT

1542
REQUEST INPUT THROUGH
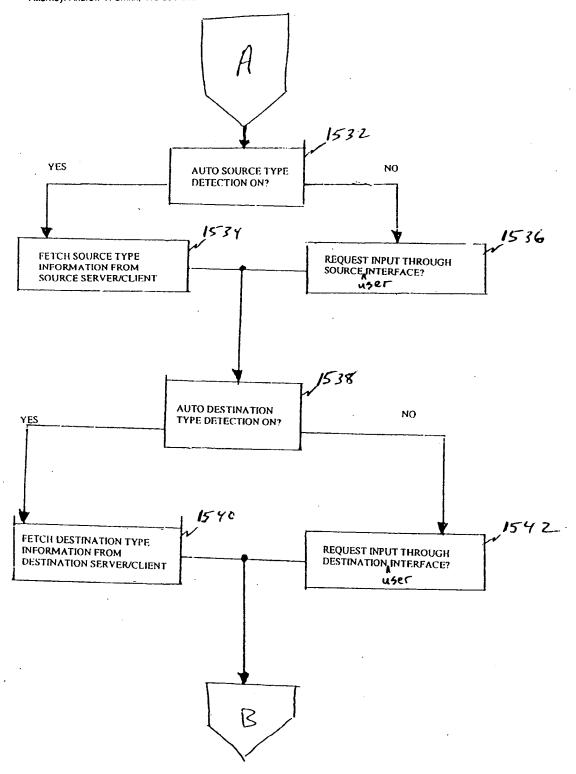DESTINATION INTERFACE?
user

B

FIG. 6B

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Remotely ..., filed November 3, 2003
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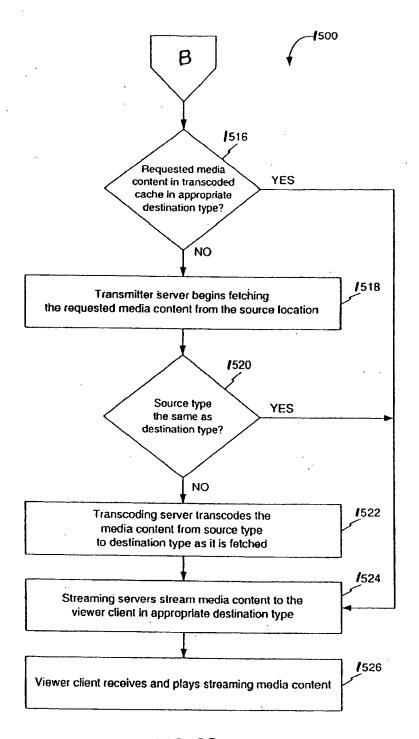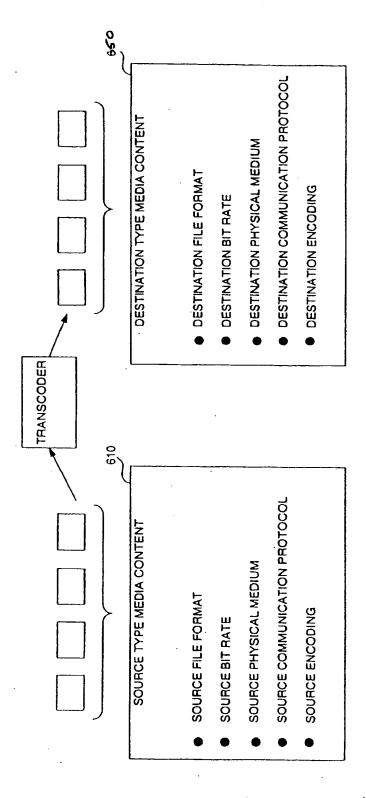Attorney: Andrew V. Smith, 415-836-2522

```
                                              500

                    ┌──────────┐
                    │    B     │
                    └──────────┘
                         │
                         ▼
                    ╱────────────╲        516
                  ╱   Requested    ╲
                ╱   media content    ╲       YES
              ⟨  in transcoded cache   ⟩ ──────────┐
                ╲   in appropriate    ╱            │
                  ╲ destination type?╱             │
                    ╲────────────╱                 │
                         │ NO                       │
                         ▼                          │
        ┌─────────────────────────────────┐  518   │
        │    Transmitter server begins     │       │
        │       fetching the requested     │       │
        │  media content from the source   │       │
        │            location              │       │
        └─────────────────────────────────┘        │
                         │                          │
                         ▼                          │
                    ╱────────────╲       520        │
                  ╱   Source type   ╲                │
                ╱   the same as       ╲    YES       │
              ⟨    destination type?    ⟩ ──────────┐│
                ╲                      ╱            ││
                  ╲                  ╱              ││
                    ╲────────────╱                 ││
                         │ NO                       ││
                         ▼                          ││
        ┌─────────────────────────────────┐  522   ││
        │  Transcoding server transcodes   │       ││
        │    the media content from        │       ││
        │   source type to destination     │       ││
        │      type as it is fetched       │       ││
        └─────────────────────────────────┘        ││
                         │                          ││
                         ▼                    524   ││
        ┌─────────────────────────────────┐        ││
        │  Streaming servers stream media  │◄───────┘│
        │   content to the viewer client   │◄────────┘
        │  in appropriate destination type │
        └─────────────────────────────────┘
                         │                    526
                         ▼
        ┌─────────────────────────────────┐
        │  Viewer client receives and      │
        │    plays streaming media content │
        └─────────────────────────────────┘
```

FIG. 6C

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FIG. 7

650

TRANSCODER

DESTINATION TYPE MEDIA CONTENT

- DESTINATION FILE FORMAT
- DESTINATION BIT RATE
- DESTINATION PHYSICAL MEDIUM
- DESTINATION COMMUNICATION PROTOCOL
- DESTINATION ENCODING

610

SOURCE TYPE MEDIA CONTENT

- SOURCE FILE FORMAT
- SOURCE BIT RATE
- SOURCE PHYSICAL MEDIUM
- SOURCE COMMUNICATION PROTOCOL
- SOURCE ENCODING

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Attorney: Andrew V. Smith, 415-836-2522

PUBLISHING VARIABLES	SOURCE TYPE 710	DESTINATION TYPE 750	DESTINATION TYPE 760
PHYSICAL MEDIUM	LOCAL DISK	INTERNET	WIRELESS NETWORK
COMMUNICATION PROTOCOL	FILE I/O	WINDOWS MEDIA STREAMING MMS PROTOCOL	HTTP
CONTAINER FORMAT	MP3	WINDOWS MEDIA	MP3
ENCODING BIT RATE	128 kpbs	56 kbps	12 kbps

FIG. 8

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CLIENT ENVIRONMENT VARIABLES	SOURCE TYPE 810	DESTINATION TYPE 850
OS VERSION	WINDOWS XP	MAC OS X
WEB BROWSER VERSION	NAVIGATOR 3.0	OMNIWEB 4.1
HARDWARE PLATFORM	PENTIUM 4	G3
USER INTERFACE LANGUAGE	JAVASCRIPT FOR NAVIGATOR 3.0	XSLT FOR OMNIWEB 4.1

FIG. 9